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wo	1	4,618,210				Kond			10-21-1986		7	<u>3</u> ¥	2.5	14	· 大
OWA	2	4,747,654				Yi-Ya			03-31-1988			38	<u> </u>	37	<u> </u>
W.	3	4,813,757					no et al.		03-21-1989			381		14	<u> </u>
Ser El	4	4,846,542				Okay			07-11-1989			38	5	16	
yukt	5	5,002,350			\longrightarrow	Drago			03-26-1991			325		129	1X
31/10	6	5,013,113				Soref			05-07-1991		_	38		19	<u> </u>
WY	7	5,039,993				Drago			08-13-1991			34	3	177	6
gus	8	5,243,672				Drago	one		09-07-1993			38	5	4	<u></u>
RINA		5,412,744				Drago	ne		05-02-1995			38	5	2	4-
2mb	10	5,450,511				Drago	ne		09-12-1995			38		37	·
11/10	11	5,467,418				Drago	ne		11-14-1995			38	5	37	
Yun	12	5,581,643				Wu			12-03-1996			38		17	
Sun	13	5,706,377				Li 01-06-1998			385 3		37				
2MV	14	5,841,931				Fores	i et al		11-24-1998			38	5	13	1
Sur	15	5,938,811				Greer			08-17-1999			<u>65</u>		38	<u> </u>
NA	16	6,108,478				<u> </u>	n et al.		08-22-2000			385		129	
SM. KO	17	6,118,909				Chen	et al.		09-12-2000			38,	5	15	
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114	21	Japan .	6-186598				Hitachi Ltd.		8.7.1994			85	18)		
su V	22	Japan	63-19792	3			NEC Corp.		16.8.1988		177	35	18	X	
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M	24	ALBERT, J. pp 1136-11	, <i>Planar Fre</i> 38	snei Lei	ns Photoin	nprinte	d in a Germar	ium-Doped Silica	Optical Waveguid	e, Optics Letters,	May 1	5, 1995, V	'ol. 20-No	o. 10,	
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¹Unique citation designation number. ²See attached Kinds of U.S. Patent Documents. ³Enter Office that issued the document, by the two letter-code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ³Kind of document by the appropriate symbols as indicated on the document under WIPO Standard St. 16 if possible. ⁴Applicant is to place a check mark here if English language translation is attached.

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	Substitute for form 1449A/PTO (NFORMATION DISCLOSURE				COMPLETE IF KNOWN
Substitute for f				Application Number	Unknown
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1 "	•			First Named Inventor	Chi Wu
5	TATEMENT 8			Group Art Unit	Unknown
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SHEET	2	OF	6	Docket Number	LIGHT1420-1

		OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	78
But	26	AMANN, M.C. et al, Calculation Of The Effective Refractive-Index Step For The Metal-Cladded-Ridge-Waveguide Laser, Applied Optics, VOL 20, No.8, Apr 15 1981, pg 1483-1486	
gurt	27	BABA, S. et al., A Novel Integrated-Twin-Guide (ITG) Optical Switch with a Built-in TIR Region; IEEE Photonics Technology Letters; VOL 4, No.5, May 1992, pg 486-488	
BNU	28	BENSON, T.M., Etched-Wall Bent-Guide Structure for Integrated Optics in the III-V Semiconductors, Journal of Lightwave Technology, VOL LT-2, No.1, Feb 1984; pg 31-34	
BNH	30	BERRY, G.M. et al., Analysis Of Multiplayer Semiconductor Rib Waveguides With High Refractive Index Substrates, Electronics Letters; VOL 29, No.22; Oct 28 1993, pg 1941-1942	
Bull	31	BETTY, I. et al., A Robust, Low-Crosstalk, InGaAsP/InP Total-Internal-Reflection Switch For Optical Cross-Connect Application	
RNH	32	BURKE, S.V., Spectral Index Method Applied to Coupled Rib Waveguides, Electronics Letters, VOL 25, No.9, Apr 27 1989, pg 605-606	
Bust	33	BURNS, W.K. et al., Mode Conversion in Planar-Dielectric Separating Waveguides; IEEE Journal of Quantum Electronics, VOL QE-11, No.1, Jan 1975; pg 32-39	
But	34	CAI, Y. et al., A Novel Three-Guide Optical Coupler Using A Taper-Formed Waveguide; j. Appl. Phys 69(5), Mar 1991; pg 2810-2814	
But	35	CAVAILLES, J.A. et al., First Digital Optical Switch Based on InP/GalnAsP Double Heterostructure Waveguides; Electronics Letters, VOL 27, No.9, Apr 25 1991, pg 699-700	
But	36	CHEN, R.T. et al., Design and Manufacturing of WDM Devices; Proceedings of SPIE VOL 3234	
But	37	CLEMENS, et al., Wavelength-Adaptable Optical Phased Array in SiO2-Si, Photonics Technology Letters, October 1995, Vol. 7-No 10, 1040-1041.	
Shut	38	DAGLI, N. et al., Analysis of Rib Dielectric Waveguides; IEEE Journal of Quantum Electronics, VOL QE-21, No.4, Apr 1985, Pg 315-321	
Bust	39	DAGLI, N. et al., Theoretical and Experimental Study of the Analysis and Modeling of Integrated Optical Components; IEEE Journal of Quantum electronics, VOL 24, No.11, November 1988; pg 2215-2226	
(SWA	40	DERI, R.J., et al., Low-Loss GaAs/AlGaAs Waveguide Phase Modulator Using A W- Shaped Index Profile; Sep 6 1988	
Hust	41	DERI, R.J., et al., Low-Loss Multiple Quantum Well GalnAs/InP Optical Waveguides, Feb 21, 1989	
Sulf	42	DEVAUX, F. et al., 20Gbit/s Operation of a High-Efficiency InGaAsP/InGaAsP MQW Electroabsorption Modulator With 1.2-V Drive Voltage; IEEE Photonics Technology Letters, VOL 5, No.11, Nov 1993, pg 1288-1290	
RINA	43	DOERR, C.R. et al., Chirping Of The Waveguide Grating Router For Free-Spectral-Range Mode Selection in The Multifrequency Laser, IEEE Photonics Technology Letters, April 1996, Vol. 8-No. 4, pp 500-502	
Bin	44	DOERR, C.R. et al., Chromatic Focal lane Displacement in the Parabolic Chirped Waveguide Grating Router, May 1997, Vol. 9-No. 5, pp 625-627	
and	45	DRAGONE, c. Efficient NxN Star Couplers Using Fourier Optics, pp 479-48, March 1989, Vol. 7-No. 3, Journal of Lightwave Technology	
But	46	FISCHER, et al., Singlemode Optical Switches Based on SOI Waveguides with Large Cross-Section, Electronics Letters, March 3, 1994, Vol. 30-No.5, pp. 406-408.	
CWH	47	FISCHER, K. et al, Sensor Application Of SiON Integrated Optical Waveguides On Silicon; Elevier Sequola, 1992; pg 209-213	
	- 48	FISH, G. et al., Monofithic InP Optical Crossconnects: 4x4 and Beyond, JWB2-1, Pg 19-21	
Cy VI	49	FURUTA, H. et al, Novel Optical Waveguide For Integrated Optics, Applied Optics, VOL. 13, NO. 2, Feb. 1974, pg. 322-326	
CW	-50	GINI, E. et al., Low Loss Self-Aligned Optical Waveguide Corner Mirrors in InGaAsP/InP, We P2.22	
BW	51	GOEL, K. et al Design Considerations for Low Switching Voltage Crossing Channel Switches; Journal of Lightwave Technology, VOL 6, No.6, June 1988; pg 881-886	

Examiner Signature	S. Heal	ķ	Date Considered	6/	17/04

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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1 "	INFORMATION DISCLOSURE			First Named Inventor	Chi Wu
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		OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	Ţē
BUNG	52	GRANESTRAND, P. et al., Integrated Optics 4x4 Switch Matrix with Digital Optical Switches, Electronics Letters, VOL 26, No.1, Jan 4, 1990; pg 4-5	
Rus	53	HIMENO, A. et al., Loss Measurement and Analysis of High-Silica Reflection Bending Optical Waveguides, Journal of Lightwave Technology, January 1988, Vol. 6-No. 1, 41-46.	
BWD	54	HSU, K.Y. et al., Photonics devices and Modules, www.cc.nctu.edu.tw/-ctrlee_mti/research_topic/photonic_devices_modules.htm, pp 1-3.	
anu	55	HUANG, T.C. et al., Depletion Edge Translation Waveguide Crossing Optical Switch; IEEE Photonics Technology Letters; VOL 1, No.7, Jul 1989, pg 158-170	
and	56	HUTCHESON, L.D. et al., Comparison of Bending Losses in Integrated Optical Circuits; Optics Letters, VOL 5, No.6, Jun 1980, pg 360-362	
BMV	57	INOUE, H. et al, Low Loss GaAs Optical Waveguides, Journal of Lightwave Technology, VOL LT-3, No.6, Dec. 1985; pg 204-209	
BUK	58	IRACE, A. et al., Fast Silicon-on-Silicon Optoelectronic Router Based on a BMFET Device, Journal of Selected Topics in Quantum Electronics, January/February 2000, Vol. 6-No. 1, pp. 14-18.	
BMH	59	ITO, F. et al., Carrier-Injection-Type Optical Switch In GaAs With A 1.06-1.55 µm Wavelength Range; Appl. Physics Letters, 54(2) Jan 9, 1989; pg 134-136	
But	60	JACKMAN, N. et al., Optical Cross Connects for Optical Networking; Bell Labs Technical Journal, Jan-Mar. 1999; pg 262-281	
BUNS	61	JOHNSTON, I.R., et al., Silicon-Based Fabrication Process For Production Of Optical Waveguides; IEE Proc-Optoelectron., VOL 143, No.1, Feb 1996, pg 37-40	
Gum	62	KAENKO, A. et al., Athermal Silica-based Arrayed-waveguide Grating (AWG) Multiplexers with New Low Loss Groove Design, TuO1-1, pg 204-206	
3ult	63	KASAHARA, R. et al., Low-Power Consumption Slica-Based 2x2 Thermooptic Switch Using Trenched Silicon Substrate, IEEE Photonics Technology Letters, VOL 11, No. 9, Sep 1999, pg 1132-1134	
and	64	KHAN, M.N. et al., Fabrication-Tolerant, Low-Loss, and High-Speed Digital Optical Switches in InGaAsP/InP Quantum Wells; Proc 21st Eur.Conf.on Opt.Comm.(ECOC '95-Brussels), pg 103-106	
ZWH	65	KHAN, M.N. et al., High-Speed Operation of Quantum Well Electron Transfer Digital Optical Switches; pg 102-102c	
BMA	66	KIRIHARA, T. et al., Lossless And Low Crosstelk 4x4 Optical Switch Array, Electronics And Communications In Japan, Part 2, VOL 77, No.11, 1994, pg 73-81	
3 W	67	KIRIHARA, T. et al., Lossless and Low-Crosstalk Characteristics in an InP-Based 2x2 Optical Switch, IEEE Photonics Technology Letters, VOL 5, No. 9 Sept 1993, pg 1059-1061	
Burg	68	KOKUBUN, Y. et al., Athermal Waveguides for Temperature-Independent Lightwave Devices, November 1993, 1297-1298, Vol. 5-NO. 11, IEEE Photonics Technology Letters.	
But	69	KCKUBUN, Y. et al., Temperature-Independent Narrowband Optical Filter at 1.3 µm Wavelength by an Athermal Waveguide, 10th October 1996, Vol. 32-No. 21, Electronics Letters	
SW	70	KOKUBUN, Y. et al., Temperature-Independent Optical Filter at 1.55 µm Waveguide Using a Silica-Based Athermal Waveguide, 19 February 1998, Vol. 34-No. 4, Electronics Letters	
2W. 4	71	KOKUBUN, Y. et al., Three-Dimensional Athermal Waveguides for Temperature Independent Lightwave Devices, 21ª July 1994, Vol. 30-No. 15, Electronics Letters	
end	72	KOSTRZEWA, C. et al., Tuneble Polymer Optical Add/Drop Fitter for Multiwavelength Networks, Photonics Technology Letters, November 1997, Vol. 9-No. 11, 1487-1489.	
ans	73	LAAKMAN, K. D. et al., Waveguides: Characteristic Modes Of Hollow Rectangular Dielectric Waveguides; Applied Optics, VOL 15, No. 5, May 1976; pg 1334-1340.	

Date Considered	6/	11/04	
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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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		OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite . No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	Le
Bust	74	LEE, T.P. et al., Al.Ga ₁₋ As Double-Heterostructure Rib-Waveguide Injection Laser, IEEE Journal of Quantum Electronics; VOL QE-11, No.7, July 1975; pg 432-435	
But	75	LIU, Y.L. et al., Silicon 1x2 Digital Optical Switch Using Plasma Dispersion; Electronics Letters, VOL 30, No.2, Jan20, 1994; pg 130-131	
Sult	76	MAK, G. et al., High-Speed Bulk InGaAsP-InP Electroabsorption Modulators with Bandwidth in Excess of 20 GHz, IEEE Photonics Technology Letter, VOL 2, No.10, Oct 1990, pg 730-733	
zult	77	MARCATILI, E., Improved Coupled-Mode Equations for Dielectric Guides; IEEE Journal of Quantum Electronics, VOL QE-22, No.6, June 1986; pg 988-993	
AWW	78	MARCATILI, E.A.J., Bends in Optical Dielectric Guides; The Bell System Technical Journal, Sep 1969; pg 2103-2132	
GINH	79	MARCATILI, E.A.J., Dielectric Rectangular Waveguide and Directional Coupler for Integrated Optics, The Bell System Technical Journal, Sept 1969 pg 2071-2101	
SW	80	MARCATILI, E.A.J., Slab-Coupled Waveguides; The Bell System Technical Journal, April 1974; American Telephone & Telegraph Company, VOL 53, No.4, April 1974	
BWA	81	MIRZA, A.R. et al, Silicon Wafer Bonding For MEMS Manufacturing, Solid State Technology, Aug 1999, pg 73-78	
amt.	82	MOERMAN, I. et al., A Review on Febrication Technologies for the Monolithic Integration of Tapers with III-V Semiconductor Devices; IEEE Journal of Selected Topics in Quantum electronics, VOL 3, No.6, Dec. 1997, pg 1308-1320	
awa	83	MÜLLER, G. et al., First Low Loss InP/InGaAsP Optical Switch with Integrated Mode Transformers, ThC12.10; Pg 37-40	
Qivb	84	NAYYER, J. et al., Analysis of Reflection-Type Optical Switches with Intersecting Waveguides, Journal of Lightwave Technology, VOL 6, No.6, June 1988; pg 1146-1152	
GWA		NEGAMI, t. et al., Guided-Wave Optical Wavelength Demultiplexer Using An Asymmetric Y Junction; Appl. Phys. Lett. 54 (12), Mar 20, 1989; pg 1080-1082	
Burg	86	NELSON, W. et al., Optical Switching Expands Communications-Network Capacity; Laser Focus World, Jun 1994, pg 517-520 ;	
SM	87	NELSON, W.H. et al., Wavelength-and Polarization-Independent Large Angle InP/InGaAsP Digital Optical Switches with Extinction Ratios Exceeding 20 dB; IEEE Photonics Technology Letters, VOL 6, No.11, Nov. 1994; pg 1332-1334	
BW	88	NODA, Y. et al., High-Speed Electroabsorption Modulator with Strip-Loaded GalnAsP Planar Waveguide; Journal of Lightwave Technology, VOL LT-4, No.10, Oct 1986, pg 1445-1453	
(PM)	89	OFFREIN, B.J. et al., Resonant Coupler-Based Tunable Add-After-Drop Fitter in Silicon-Oxynitride Technology for WDM Networks, Journal of Selected Topics in Quantum Electronics, Vol. 5-No. 5, 1400-1405.	
BWB	90	OKAMOTO, K. et al., Arrayed-Waveguide Grating Multiplexer With Flat Spectral Responser, Optics Letters, Jan 1 1995; VOL 20, No. 1; Pg 43-45	
CNA	91	OKAMOTO, K. et al., Flat Spectreal Response Arrayed-Waveguide Grating Multiplexer with Parabolic Waveguide Horns, Electronics Letters Online, July 15, 1996, No. 19961120, pp. 1661-1662.	
BUCK	92	OKAYAMA, H. et al., 8x8 Ti:LiNbO ₂ Waveguide Digital Optical Switch Metrix, IEICE Trans. Commun.; VOL E77-B, No.2; Feb. 1944; pg 204-208	
SWA	93	OKAYAMA, H. et al., <u>Dynamic Wavelength Selective Add/Drop Node Comprising Tunable Gratings, Electronics Letters Online</u> , April 10, 1997, No. 19970807.	
SWO	94	OKAYAMA, H. et al., Reduction of Voltage-Length Product for Y-Branch Digital Optical Switch, Journal of Lightwave Technology, VOL 11, No.2, Feb 1993; pg 379-387	,
GW	95	OKUNO, M. et al., Strictly Nonblocking 16x16 Matrix Switch Using Silica Based Planar Lightwave Circuits, VOL 10, No.266, Sep 11, 1986	
SWIT	96	OOBA, N. et al., Athermal Silice-Besed Arrayed-Waveguide Grating Multiplexer Using Birnetal Plate Temperature Compensator, Electronics Letters, 12th October 2000, Vol. 36, No. 21, pp 1800-1801	

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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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		OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS	
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Gust	97	RENAUD, M. et al., Compact Digital Optical Switches for Low Insertion Loss Large Switch Arrays on InP, Proc. 21st Eur. Conf.on Opt. Comm. (ECOC '95-Brussels), pg 99-102	
8mg	98	RICKMAN, A.G. et al., Silicon-on-Insulator Optical Rib Waveguide Loss and Mode Characteristics, Journal of Lightwave Technology, October 1994, Vol. 12-No. 10, pp 1771-1776	•
Bur	99	ROLLAND, C. et al., 10 Gbit/s, 1.56 µm, Multiquantum Well InP/InGaAsP Mach-Zehnder Optical Modulator, Electronics Letters, Mar 4, 1993, VOL 29, No.5, pg 471-472	
gus	100	Santec Sales Brochure for year 2000 entitled "Ogtical Components"	
BMA	101	SCHAUWECKER, B. et al, Small-Size Silicon-Oxynitride AWG Demultiplexer Operating Around 725 nm, IEEE Photonics Technology Letters, Vol. 12 No. 12, December 2000	
SW	102	SCHLACHETZKI, A. Monolithic IO-Technology-Modulators and Switches Based on InP, SPIE VOL 651 Integrated Optical Circuit Engineering III (1986), pg 60-88	
Birth	103	SILBERBERG, Y. et al., Digital Optical Switch; Appl. Phys. Lett.; VOL 51, No.16, Oct 19, 1987, pg 152-154	
BUR	104	SMIT, M.K., New Focusing and Dispersive Planar Component Based on an Optical Phased Array, Electronics Letters; Mar 31, 1988, VOL 24, No.7; Pg 385-386	
gul	105	SMITH, S.D. et al., CW Operation of Corner Cavity Semiconductor Lasers; IEEE Photonics Technology Letters, VOL 5, No.8, Aug 1993; pg 876-879	
BUN	106	SNEH, A. et al., Compact Low Crosstelk and Low Propagation Loss Quantum-Well Y-Branch Switches; PDP 4-1 - 4-5 📈	
and	107	SOOLE, J.B.D. et al., Use of Multimode Interference Couplers to Broaden the Passband of Wavelength-Dispersive Integrated WDM Fitters; IEEE Photonics Technology Letters, VOL 8, No.10, Oct 1996; pg 1340-1342	
Qui	108	STOLL, L. et al., 1:8 Optical Matrix Switch on InP/InGaAsP with Integrated Mode Transformers; Optical Switches and Modulators II, pg 531-534	
Sul	109	STOLL, L et al., Compact and Polarization Independent Optical Switch on InP/InGaAsP; TuB7.2; pg 337-340	
ZIN	110	STUTIUS, W. et al, Silicon Nitride Films On Silicon For Optical Waveguides, Applied Optics, VOL 16, No.12, Dec 1977, pg 303-307	
and	111	SUGIE, T. et al.,1.3-µm Leser Diodes with a Butt-jointed Selectively Grown Spot-Size Converter, ThB2-6, IOOC95, pg 52-53	
Bulo	112	TADA, K. et al., Bipolar Transistor Carrier-Injected Optical Modulator/Switch: Proposal and Analysis, IEEE Electron Device Letters, VOL EDL-7, No.11, Nov 1986, pg 605-606	
GW	113	TAKADA, et al., Optical Spectrum analyzer using Cascaded AWG's with Different Channel Spacings, Photonics Technology Letters, July 1999, Vol. 11, No. 7, pp. 863-864.	
CZM.	114	TAKAHASHI, H. et al., Arrayed Waveguide Grating for Wavelength Division Multi/Demultilexer with Nanometre Resolution, PWG-NTT-7	
ew	115	TAKIGUCHI, K. et al., Dispersion Compensation Using a Planar Lightwave Circuit Optical Equalizer, Photonics Technology Letters, April 1994, Vol. 6, No. 4, pp. 561-564.	
BUNG	116	TIEN, P.K. et al., Formation of Light-Guiding Interconnections in an Integrated Optical Circuit by Composite Tapered-Film Coupling, Applied Optics, VOL 12, No. 8, Aug 1973; pg 1909-1916	
SIM	117	TOYODA et al., Thermoplastic Switch and Wavelength Tunable Filter using Polymer Waveguides, Abstract of paper presented at Opticomm 2001 on August 22, 2001.	
and	118	TREYZ, G.V. et al., Silicon Optical Modulators at 1.3 µm Based on Free-Carrier Absorption; IEEE Electron Device Letters, VOL 12, No.6, June 1991; pg 276-278	
(Jun)	119	TSUDA, H. et al., Performence Analysis of a Dispersion Compensator Using Arrayed-Waveguide Gratings, Journal of Lightwave Technology, August 2000, Vol. 18-No.8, pp 1139-1147.	

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sut	120	TSUDE, H. et al., Second- and Third-Order Dispersion Compensator Using a High-Resolution Arrayed Waveguide Grating, IEEE Photonics Technology Letters, May 1999, Vol. 11-No. 5, 569-571.	
But	121	VINCHANT et al, InP 4x4 Digital-Optical-Switch Module For Multiwavelength Cross-Connect Applications; OFC '95 Technical Digest, Thursday ThK2, pg 281-282	
ano	122	VINCHANT, J.F. et al., First Polarisation insensitive 4x4 Switch matrix on InP with Digital Optical Switches, TuB7.3, pg 341-344	
gus	123	VINCHANT, J.F. et al., InP Digital Optical Switch: Key Element for Guided- Wave Photonic Switching; IEE Proceedings-J, VOL 140, No.5, Oct 1993; pg 301-307	
Eur,	124	VINCHANT, J.F. et al., Low Driving Voltage or Current Digital Optical Switch on InP for Multiwavelength System Applications; Electronics Letters, VOL 28, No.12, Jun 4, 1992; pg 1135-1137	
Buk	125	WAKITA, K. et al., Long Wavelength Waveguide Multiple Quantum Well Optical Modulators; IEEE Journal of Quantum Electronics, VOL QE-23, No.12, Dec 1987, pg 2210-2215	
Burg	126	WANRU, Z. et al., Total Internal Reflection Optical Switch with Injection Region Isolated by Oxygen Ion Implantation; pg 1-10	\vdash
gmo	127	YAMADA, et al., Cross Talk Reduction in a 10 GHz Specing Arrayed-Waveguide Grating by Phase-Error Compensation, Journal of Lightwave Technology, March 1998, Vol. 16-No. 3, pp. 364-371.	
24H	128	YANAGAWA, H. et al., Polarization-and Wavelength-Insensitive Guided-Wave Optical Switch with Samiconductor Y Junction; Journal of Lightwave Technology, VOL 8, No.8, Aug 1990, pg 1192-1197	
MI	129	YU, S. et al., High Speed All-Optical Packet Routing Using A Vertical Coupler Crosspoint Space Switch	\vdash
3uls	130	YU, S. et al., Ultralow Cross-Talk, compact Integrated optical crosspoint space switch arrays employing active InGaAsP/InP Vertical Waveguide Couplers, Integrated Optical Crosspoint Switch Arrays, Siyuan Yu et a, CPD24-2	
zuk)	131	ZENGERLE, R. et al., Tapered Twin Waveguides For Spot-Size Transformation In InP, TheB2-5; IOOC 95; pg 50-51	
248	132	ZIRNGIBL, M. et al., Digitally Tunable Leser Based On The Integration Of A Waveguide Grating Multiplexer And An Optical Amplifier, IEEE Photonics Technology Letters, April 1994, Vol. 6-No. 4, pp 516-517	
Bus	133	ZUCKER, J.E. et al., Strained Quantum Wells for Polarization-Independent Electrooptic Waveguide Switches, Journal of Lightwave Technology, VOL 10, No.12, Dec 1992, pg 1926-1930	
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